REMARKS

Claims 1, 13, 14, 16, 17 and 19-31 are pending in this application. By this Amendment, claims 1, 13, 16, 19, 24, 28 and 29 are amended. New claims 30 and 31 are added.

The Office Action rejects claims 1, 13, 14, 16, 17 and 19-29 under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 6,965,634 to Clark in view of Applicant's admitted prior art.

Clark is directed to a technique for generating a long code by stringing together several shorter codes with cryptographic dithering of the boundaries between the shorter codes. The overall purpose of the Clark technique is to allow acquisition of this long code without first acquiring a separate shorter code.

The "Applicant's admitted prior art" at paragraphs [0007] to [0009] of the present application that is referred to in the Office Action is, as expressly stated in paragraph [0007] applicable in a synchronized system: "With this scheme, the average power is not increased and, since **the system is synchronous**, the receiver can anticipate when the bursts, or pulses, will occur." Paragraph [0007], line 3-4, emphasis added. Thus, the system described there in the present application concerns a system in which the transmitter and receiver are already synchronized. Signal acquisition is not even an issue if the transmitter and receiver are synchronized. This is not the case according to the present invention.

In accordance with the present invention, a technique is provided to enable a receiver to acquire synchronization with a transmitter. Specifically, power is increased for (non-contiguous) short bursts of code chips. The intervals between these short bursts are varied and are cryptographically generated. Consequently, only authorized receivers that know the cryptographic sequence (used in the transmitter to generate the intervals between the boosted bursts) can take advantage of their increased power in order to acquire synchronization to the transmitter. The authorized receivers know the relative timing between bursts and can therefore correlate with the higher power chips and ignore the lower power chips in between in order to acquire synchronization with the transmitter.

Again, the present invention is directed to a situation in which the receiver is not yet synchronized with the transmitter. The receiver needs to acquire synchronization to the signal from the transmitter before it can begin tracking the signal and recovering the transmitted data. Knowing the relative timing between the boosted sets of chips allows the receiver to search for a

pattern consisting of multiple sets of boosted chips separated in time by known intervals of dead space (chips without the power boost). Consequently, the present invention involves increasing signal power only for part of the time, but nevertheless achieves the full effect of the power increase for authorized receivers, thereby improving anti-jam performance without having to increase average power.

The amendments made to independent claims 1, 13, 16, 19, 24, 28 and 29 are to clarify that the present invention is directed to a technique to allow only those "authorized" receivers that have knowledge of the cryptographic sequence used to generate time durations between boosted portions in the transmit signal to acquire synchronization to the transmit signal.

It is respectfully submitted that one with ordinary skill in the art would not combine the teachings of Clark with the teachings of the alleged "Applicant's admitted art" as referred to above and achieve the present invention. Again, "Applicant's admitted art" concerns a system where a transmitter and a receiver are already synchronized. Clark is directed to a system in which a receiver must receive and analyze a long code that is strung together by several shorter codes with cryptographic dithering. In Clark's scheme there are no sections of the code that are ignored by the authorized receivers. Clark's scheme requires reception and correlation to **all of the chips in the code**. By contrast, the technique according to the present invention allows for the receivers to ignore the non-boosted chips so that they can take full advantage of the boosted selected subsets of code chips by determining the time intervals between those boosted subsets of chips in order to acquire synchronization to the transmitter.

Claims 30 and 31 both recite the transmit and receive functions. Claim 30 is a method claim and claim 31 is a claim. To reiterate the arguments presented above, the techniques of the present invention are for the benefit of the signal acquisition process, not the tracking the signal after synchronization is acquired. Nevertheless, it is much more difficult to acquire a signal in the presence of jamming than it is to continue to track it after acquisition.

The transmitter generates the basic code (pseudorandom noise sequence) that is used to modulate the carrier. The transmitter then boosts the transmit power during finite length bursts or pulses, with each burst encompassing a plurality of code chips. The individual bursts have different lengths and different time intervals spacings between them, wherein the burst lengths and spacings are controlled by a cryptographic sequence, known only to the transmitter and authorized receivers.

The authorized receiver configures its correlator during an acquisition mode to match only to higher power portions of the sequence having time intervals between higher power bursts based on said cryptographic sequence in order to acquire synchronization to the transmit signal. That is, the receiver spaces the tap points for its correlator to correspond with sequence and lengths of high power bursts of code, and does not waste any of its correlator taps on low power sections of code. Then the resulting pattern, controlled by the cryptographic sequence and known only to the authorized receivers, is effectively slid along the incoming waveform, as shown in FIG. 2 of the present application, until a match is made. When the received sequence pattern matches the correlator pattern, there is a peak in the correlation function, indicating to the receiver that synchronization the signal has been acquired. Once synchronized, the receiver switches to tracking mode and continues to track the transmitted signal, except now the entire pseudorandom sequence is utilized, including the "low power" chips.

It is respectfully submitted that the rejections of claims 1, 13, 14, 16, 17 and 19-29 be withdrawn and that these claims be allowed, along with newly added claims 30 and 31. The Examiner is cordially invited to telephone the undersigned in the event there are any further questions or comments.

Applicant hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee for such extension is to be charged to Deposit Account No. 05-0460.

Respectfully submitted by
EDELL, SHAPIRO & FINNAN, LLC

Dated: February 15, 2007

By: /D. Andrew Floam/
D. Andrew Floam
Reg. No. 34,597

EDELL, SHAPIRO & FINNAN, LLC
CUSTOMER NO. 27896
1901 Research Boulevard, Suite 400
Rockville, MD 20850
(301) 424-3640